UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

MAR 1 - 2019

Robert Mancini
Project Manager, Refining Business Unit
Chevron Environmental Management Company
1200 State Street
Perth Amboy, New Jersey 08861

Re: 1. Supplemental Field Sampling and Analysis Plan, Sediments, November 16, 2018
Former Chevron Perth Amboy Facility
Perth Amboy, Middlesex County, New Jersey
EPA ID #: NJD081982902

Dear Mr. Mancini:

The U.S. Environmental Protection Agency (EPA) Region 2 and the New Jersey Department of Environmental Protection (NJDEP) have completed our review of the Supplemental Field Sampling and Analysis Plan (SFSAP), Sediments, dated November 16, 2018 which was submitted for the Former Chevron Perth Amboy Facility in Perth Amboy, Middlesex County, NJ. The November 2018 RTC and the associated SFSAP were submitted by Chevron (Chevron) Environmental Management Company pursuant to the Resource Conservation and Recovery Act (RCRA), the Hazardous and Solid Waste Amendments (HSWA) Permit of 2013, and the Technical Requirements for Site Remediation at N.J.A.C. 7:26E (TRSR).

We have also reviewed the Response to August 31, 2018 EPA/NJDEP Letter, dated November 15, 2018. Comments for this section, including addressing the DITSED-08 area, will be submitted under a separate cover. As agreed upon at the September 17, 2018 meeting, this Supplemental Field Sampling and Analysis Plan serves to fulfill the HSWA 2013 permit requirement to complete a RCRA Facility Investigation (RFI) of the adjacent waterbodies. Any additional investigations and remedial action will be negotiated after the completion of the RFI. Please note, the below comments are organized by the SFSAP Section and Page.

1. **Section 1.0 Introduction, Page 1, 3rd paragraph**: The document states, "The facility has completed several phases of the RFI for the three surface water bodies…" However, the historical data is not included in this document, as such it is unclear if the proposed sampling locations and intervals are sufficient. The document should be revised to include a more detailed discussion of sampling results (text, figure, table) from prior investigations so that we can evaluate if the proposed locations are adequate to sufficiently delineate the nature and extent of contamination in the waterbodies and along the adjacent shorelines.

2. **Section 1.0 Introduction, Page 3: The document states**, "As part of the Supplemental EE, Chevron…further evaluated potential contaminant migration pathways to surface water." However, limited information on this evaluation was included in this document as such we are unable to determine if the proposed sampling program is adequate. The document, as well as Figure 2, should be revised to discuss, at length, any AOCs/SWMUs/PAOCs with the potential to impact these waterbodies, including

but not limited to: SWMUs 1, 2, 3, 7, 8, 24, 26, 31, 35, 36, 40, 41, 45, etc. This figure should also show the former confluence of historic Spa Spring Creek with Woodbridge Creek and areas where non-point source discharges over the site's operation history may have occurred via sheet runoff or groundwater discharges, and/or were associated with overwater fuel transfers, former dock/pier operations, etc. Additionally, this figure should indicate the location of shoreline/perimeter soil borings where light non-aqueous phase liquid (LNAPL) was detected, as referenced below in Comment No. 9. The above information is necessary to determine if the proposed sampling program is adequate.

3. Section 1.0 Introduction, Page 3: The document states, "Historically, the Facility has discharged treated storm water and waste waters to outfalls located in Spa Spring Creek and Woodbridge Creek." However, limited additional information on these historic outfalls is included in this document. The document should be revised to include text and accompanying figures detailing the location of known and historic tidal creeks, outfalls, and other current and former discharge (permitted and unpermitted) points into Woodbridge Creek, Spa Spring Creek, and the Arthur Kill; including those referenced in Attachment 3 (DSN 0004A, 004B, 004C, 005, 005A, 006A, etc.). The document should be revised to discuss waste management practices prior to 1974 (date of initial Federal NPDES permit), prior to city sewer connections, and identify historic direct discharges of industrial waste into the three waterbodies. Chevron is directed to a historic document by the Interstate Sanitation Commission Report, entitled Location of City Sewers Adjacent to Industrial Plants Bordering the Arthur Kill in New Jersey, dated January 1965, which discusses the direct discharge of waste material into Woodbridge Creek and the Arthur Kill from the former California Oil Company (electronic pages 13, 14, 62) and other facilities. The document is available at: http://www.iec-nynjct.org/sites/default/files/2018-08/1965%20Sewers%20Locations%20Arthur%20Kill%20NJ%20opt.pdf.

4. Section 2.1 Sample Collection, Page 5, Table 1 and Figure 2: The document states, "In summary the proposed sample locations were selected to…revisit previously sample locations to supplement analysis with shallow and/or deeper samples as well as EPH where it had not previously been analyzed." However, it is unclear if this goal will be achieved since the previous sample locations/intervals were not referenced in the document, in any form, for direct comparison. Further review of the document suggests that few samples will be collected at depth (greater than 0.5 ft. samples) for any contaminant of concern (COC). The document should be revised to include a table comparing past sampling intervals/depths to those proposed herein, so that we can confirm that the sampling program is adequate to sufficiently delineate the impacts to the waterbodies.

5. Section 2.1 Sample Collection, Additional Background Locations Woodbridge Creek, Page 5: In response to concerns that SED-09 was not an appropriate background location, Chevron noted that "eight (8) additional background samples along Woodbridge Creek, in the vicinity of existing background location SED-10…" would be collected. While, the 2002 sample results for SED-10 indicated low contamination, a review of Figure 2 suggests that the location is directly beneath a highway overpass which is a potential source of PAHs and inorganics. As referenced in NJDEP's EETG Section 5.3.4, professional judgement should be used regarding the specific locations of the additional background samples such that obvious offsite sources of contamination should be avoided. Chevron also noted in the Response to Comments (Page 5, Woodbridge Creek Comment No. 1) that "SED-09 transects represents potential off-site source conditions." Please note, before we will concur that contamination detected at SED-09 is not site related, Chevron must collect sufficient data to support impacts from off-site sources as referenced in NJDEP TRSR (N.J.A.C. 7:26E-3.10).

6. Section 2.1 Sample Collection, Data Gaps Woodbridge Creek New Locations, Page 5: The document states, "Chevron will attempt to collect shallow sediment samples between existing transects SED-03 and SED-02…This additional transect is SED-25-A,B,C…The feasibility of completing this transect depends on access approval of the utility owners." Since Figure 2 does not reference the location of the pipelines/utilities, it is difficult to evaluate the issues with this location. Figure 2 should be revised to include the location of the pipeline/utilities and any other obstacles to sampling.

7. Section 2.1 Sample Collection, Data Gap Samples EPH Analysis at Existing Boring Locations, Page 6: The document states, "Chevron will resample all past locations on Woodbridge Creek and Spa Spring Creek for EPH analysis where EPH was not analyzed previously." However, a review of the document suggests the proposed additional EPH analysis is generally limited to the shallow 0 to 0.5 ft. interval where analysis was conducted for other COCs. Further review of the available data suggests that collection of subsurface (at-depth) samples were previously limited in scope, such that the majority of samples were not analyzed for extractable petroleum hydrocarbons (EPH) or other COCs below 0 to 0.5 ft. interval including, but not limited to: SED-01 A/B/C; SED-2C, SED-3A, SED- 4B; SED-05A/B/C, SED-06A/C, SED-07A/B/C; SED-08A/C; SED-09B; SED-10A/B, SED-11C, etc. The document should be revised to included additional at-depth (below 0.5 ft.) sample collection/analysis for EPH at all historic and proposed sample locations/transects. In addition, please specify if/when the samples hit bedrock and the corresponding depth.

8. Section 2.1 Sample Collection, Additional Vertical Samples at Existing Boring Locations, Page 6: Though titled "Additional Vertical Samples" this section only discusses the collection of shallow samples at transect SED-19. As noted above regarding EPH, the document should be revised to include the collection of shallow and at-depth (greater than 0.5 ft. interval) samples for the full suite of parameters at all existing and proposed transects/locations where data does not previously exist.

9. Section 2.1.1 Sediment Sampling, Page 6: The document states, "…sediment cores will be advanced…to refusal, or a total depth of 10 feet below the sediment surface or to the top of underlying parent material…whichever is encountered first." The document later states, "All locations will be advanced to interface of the sediment and parent material or refusal." The document should be revised to be consistent. However, based on boring logs for several adjacent SWMU's, we are not certain that limiting boring depth to 10 feet is adequate for all locations. A quick review of boring logs associated with SWMU 40 suggests the presence of free/residual LNAPL to a depth of 26 ft. bgs in borings (i.e. S40-7/U040-007, MW-33, U040-001, HP-0001-D, S40-7/U040-007, S40-8/U040-008, etc.) along the shoreline of Woodbridge Creek. Since information, such as this, is scattered across numerous documents, we were unable to do a more thorough evaluation of all the waterbodies. The document should be revised include a figure and thorough discussion of all existing soil borings along the shorelines specifically at AOCs/SWMUs where LNAPL has been detected so that we can confirm if the proposed locations adequately evaluates impacts to the waterbodies via seepage or direct discharge. Furthermore, unless Chevron has data to indicate no contaminant migration pathway from these SWMUs where LNAPL was detected to the adjacent waterbodies, we reiterate the need for contingency borings to determine the full extent of petroleum product impacting the waterbodies and the subsurface.

10. Section 3.0 Deliverables, Page 8: The document states, "The report will incorporate the results of soil and groundwater data from adjacent SWMUs and AOCs." As noted above, this information (figure/boring logs, etc.) should be included in the revised SFSAP, for any adjacent AOCs/SWMUs where LNAPL or where highly elevated COCs are present in the soil or groundwater, so that we can confirm if the proposed locations adequately evaluate impacts to the waterbodies. The revised SFSAP should also include historic discharge monitoring data (as referenced in Attachment 3) and any other

information concerning past waste management practices, that will be necessary to evaluate the proposed sampling program.

11. Table 1 Proposed Sediment Sampling: Table 1 should be revised to include why each, sample location and interval is proposed, referencing the specific contaminant migration pathway (i.e., specific AOC, SWMU, outfall, former tidal creek, etc.) that is being evaluated. As noted above the document should also include a summary of historic sample locations, in table form, to confirm that what is proposed is sufficient.

12. Attachment 5 Dredging Documents: Chevron had suggested that due to historic dredging of Arthur Kill no additional sampling was necessary as noted in supporting documentation included in Attachment 5. However, review of Figure 5-1 suggests that dredging of the Arthur Kill was limited to two areas (A and B) adjacent to SWMUs 36 and 45 only. Furthermore, Attachment 5 did not include any analytical data or information regarding contaminant concentrations in the dredged material and only included dredging permit authorization for Area B. Attachment 5 should be revised to include additional information on dredging activities and pre-dredging contaminant concentrations for both Areas A and B. Furthermore, based on the limited information provided, it is unclear if any impacts to Arthur Kill from adjacent SWMU 36 and 45 were noted during dredging activities. The document should clarify if any impacts from these SWMUs were noted during dredging operations. The document should also clarify/discuss if there are other adjacent AOCs, with the potential to impact the Arthur Kill, including but not limited to: PAOC 15, AOC 29 and EY 4a LNAPL areas, AOC 29, and wells MW-155R, etc. The document should be revised to conduct additional sampling in Arthur Kill to confirm no impacts at depth from adjacent AOCs/PAOCs/SWMUs.

Should you have any questions or would like to discuss this matter further, I can be reached at 212-637-3703, or via email at vargas.ricardito@epa.gov.

Sincerely,

Ricardito Vargas

Ricardito Vargas
Project Manager
Hazardous Waste Programs Branch

cc: Lynn Vogel, NJDEP (electronic copy only)